

IRAQI C-130 BASE
BAGHDAD, IRAQ

SUSTAINMENT ASSESSMENT

SIGIR PA-07-099
JULY 24, 2007

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 24 JUL 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Iraqi C-130 Base. Baghdad, Iraq. Sustainment Assessment				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Office of the Special Inspector General for Iraq Reconstruction, 400 Army Navy Drive, Arlington, VA, 22202				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 25	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

July 24, 2007

MEMORANDUM FOR DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE
COMMANDING GENERAL, MULTI-NATIONAL
SECURITY TRANSITION COMMAND-IRAQ

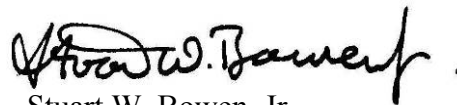
SUBJECT: Report on Sustainment Assessment of the Iraqi C-130 Base, Baghdad, Iraq
(Report Number SIGIR PA-07-099)

The Office of the Special Inspector General for Iraq Reconstruction is conducting a series of assessments to determine the current condition of completed projects subsequent to their transition to the Government of Iraq to determine whether the projects are likely to remain operational.

We are providing this report for your information and use. It addresses the current status of the Iraqi C-130 Base, Baghdad, Iraq, and the likelihood of whether the facility will remain operational. The assessment was made to provide you and other interested parties with real-time information to enable appropriate action to be taken, if warranted.

Although this report identifies sustainment problems, we did not make any recommendations for corrective action because the Multi-National Security Transition Command – Iraq is currently in the process of producing a master plan for the Iraqi C-130 Base. The master plan will address sustainment issues that we identified. The Multi-National Security Transition Command – Iraq is also researching the use of a simple packaged water chlorination process for production of potable water. This would be a replacement for the current reverse osmosis systems that require daily maintenance. Additionally, the Multi-National Security Transition Command – Iraq is also working specifically on a contract designed for the operation and maintenance of Iraq-wide Ministry of Defense generators.

We appreciate the courtesies extended to our staff. If you have any questions, please contact Mr. Brian Flynn at brian.flynn@sigir.mil or at 914-360-0607. For public or congressional queries concerning this report, please contact SIGIR Congressional and Public Affairs at publicaffairs@sigir.mil or at (703) 428-1100.



Stuart W. Bowen, Jr.
Inspector General

Special Inspector General for Iraq Reconstruction

SIGIR PA-07-099

July 24, 2007

Iraqi C-130 Base, Baghdad, Iraq

Synopsis

Introduction. The Special Inspector General for Iraq Reconstruction initiated this project assessment as part of our continuing assessments of selected Multi-National Security Transition Command – Iraq reconstruction activities. The overall objective was to determine whether projects are operating at the capacity stated in the original contract or task order objective. We conducted this limited scope assessment in accordance with the Quality Standards for Inspections issued by the President’s Council on Integrity and Efficiency. The assessment team included an engineer/inspector and an auditor/inspector.

Project Objectives. According to the contract, the purpose of this renovation project was the repair and reconstruction of the New Al Muthana Air Base (C-130 Base) for the Iraqi Air Force at the Baghdad International Airport.

Assessment Objectives. This report provides real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, we determined whether the project was operating at the capacity stated in the original contract. To accomplish this objective, we determined if the project was at full capability and capacity when accepted by the United States government, when transferred to Iraqi operators, and when observed by Special Inspector General for Iraq Reconstruction inspectors on 31 May 2007. In addition, we determined whether sustainability for full capacity operations was adequately planned and likely to continue.

Conclusions. Key construction met contract requirements and the facility appeared to have operated at full capacity when accepted by the United States government and when observed. This seemed in part due to an effective quality management system and adequate documentation of quality management during the construction process. Additionally, there was effective communication during the construction process. When observed, the facility appeared in good condition.

Operability and sustainability for some of the improvements to the facility might not be realized over the long term if the equipment and facility are not properly used and maintained.

- a. According to available documentation, generator sustainability was a problem. There were eight generators at the Iraqi C-130 Base. Two operated during the site visit, three were broken, and three were not functioning for unknown reasons. Two generators had been moved from their original locations. One of the broken generators had parts removed on 27 October 2006, 216 days before the site visit.
- b. Past instances of flooding of the sewage holding tanks and runoff of sewage into the storm water collection pond were documented in photos on 18 February and 3 March 2006. However, the problem was subsequently solved.

At the time of the site visit, it appeared the sewer collection system functioned; however, the nearby storm water collection pond and connecting drainage ditch contained sewage. The holding tank design only allowed for sewage removal by pump. A waste removal truck pumped the sewage from the collection tanks into the drainage ditch.

- c. The reverse osmosis system experienced past documented malfunctions. During the warranty period, the prime contractor reported that regular filter changes had not been performed, chlorine dosing did not meet requirements, and the reverse osmosis system pressures were not within the recommended range. Additionally, the prime contractor reported that filters, anti-scaling chemicals, testing kits, and other various maintenance items were not available on site.

During the site visit, it was noted that the total dissolved solids meter registered out of the recommended range; the on-site maintenance workers did not appear to have followed recommended maintenance and testing procedures. Spare parts were not readily available on site.

The Ministry of Defense provided an operation and maintenance contract for the Iraqi C-130 Base. The sustainment problems with the reverse osmosis system that we noted were caused by poor operations and maintenance practices on the part of the Ministry of Defense operations and maintenance contractor.

Recommendations. Although this report identifies sustainment problems, we are not making any recommendations for corrective action because the Multi-National Security Transition Command – Iraq is currently in the process of producing a master plan for the Iraqi C-130 Base. The master plan will address sustainment issues that are problematic. The Multi-National Security Transition Command – Iraq is also researching the use of a simple packaged water chlorination process for production of potable water. This would be a replacement for the current reverse osmosis systems that require daily maintenance. Additionally, the Multi-National Security Transition Command – Iraq is also working specifically on a contract designed for the operation and maintenance of Iraq-wide Ministry of Defense generators. Accordingly, management comments were not required. The Multi-National Security Transition Command – Iraq reviewed a draft of this report and had no comments or additional information.

Table of Contents

Synopsis	i
Introduction	
Objective of the Project Assessment	1
Background	1
Contract, Costs, and Payments	1
Statement of Work	1
Pre-Construction Description of the Facility	2
Progress During Construction	4
Site Assessment	7
Conclusions	14
Recommendations	15
Appendices	
A. Scope and Methodology	16
B. Acronyms	17
C. Report Distribution	18
D. Project Assessment Team Members	20

Introduction

Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties to enable appropriate action to be taken, when warranted. Specifically, we determined if the completed project was operating at the capacity stated in the original contract or task order objective. To accomplish this, we determined if the project was at full capability or capacity when accepted by the U.S. government, when transferred to Iraqi operators, and when observed by Special Inspector General for Iraq Reconstruction (SIGIR) inspectors on 31 May 2007. In addition, we determined if sustainability for full capacity operations was adequately planned and likely to continue.

Background

Contract, Costs, and Payments

Task Order 0073 under Contract FA8903-04-D-8678 was awarded on 31 October 2004, to Toltest, Inc. to perform work in accordance with the Statement of Work (SOW) addressed later in this report. The contract was a cost-plus-fixed-fee contract awarded with a contract ceiling amount of \$21,017,439. The contract is part of the World-Wide Environmental, Remediation and Construction (WERC) Contract for the Air Force Center for Engineering and the Environment (AFCEE). Three contract modifications—Mod1, Mod2, and Mod3 extended the period of performance to 30 September 2005, extended the task order completion date to 31 October 2005, incorporated new invoicing instructions, and increased the contract ceiling amount to \$30,801,495.

Statement of Work

The objective of the Baghdad International Airport (BIAP) Iraqi C-130 Base project was the reconstruction of the New Al Muthana Air Base (NAMAB) for the Iraqi Air Force at BIAP.

The contract's SOW required that work should adhere to International Building Code (IBC) as specified. Civil engineering work primarily consisted of research, renovation, and construction of the storm water system, side walks, road network, perimeter fence for the entire project, sewer system, electrical, street lighting, motor pool lighting, and fuel distribution system. The facility renovations included: very important person passenger terminal, life support, billeting, dining facility (DFAC), office billeting, clinic, aircraft hangar, 3 warehouses, 2 squadron headquarters, a base supply, warrant officer billeting, enlisted billeting, base support offices, electrical network, petroleum oil lubrication fuel depot, perimeter security fence, sanitary sewer system, site cleaning and final grading, storm water management distribution system, street lights, road network, and water distribution system. Additionally the SOW called for the repair of the hangar overhead cranes, which are capable of lifting five metric tons.

Pre-Construction Description of the Facility

The pre-construction state of the New Al Muthana Air Base indicated that it needed major renovations. Before construction, the site consisted of a set of basic buildings in poor condition, needing extensive repair. For example, Site Photos 1 and 2 show building 230, an officer billeting building, in its pre-construction state. As shown, the officer billeting building required work on the walls, plaster, floor, ceiling, roof, doors, windows, bathrooms, utilities, and finishing.

The largest structure in the renovation, the aircraft hangar that measures 80.55 meters by 135.86 meters, is shown in Site Photo 3. The pre-construction hangar needed new metal sheeting and roofing as well as renovation of the attached surrounding offices.



Site Photo 1. Pre-construction state of building B-230 front view. Extensive renovation work needed. (Contractor provided photo)



Site Photo 2. Pre-construction state of building B-230 courtyard, extensive renovations needed. (Contractor provided photo)



Site Photo 3. Pre-construction state of the hangar B-260, replacement metal needed on walls and roof. (Contractor provided photo)

Progress During Construction

AFCEE issued and administered Task Order 0073 and its subsequent modifications for MNSTC-I. SIGIR found this project well documented. AFCEE engaged the contractor during construction. Construction fieldwork started on 2 December 2004 and the final items of the SOW were completed by 4 November 2005. Quality assurance (QA) reports from 1 January 2005 to 25 October 2005 were available as well as quality control (QC) reports from 1 December 2004 to 26 October 2005. There were 3,079 photos taken of the Iraqi C-130 Base facility before, during, and after construction. Additionally, the contractor produced a video of each building under reconstruction. Facility renovation and construction included 16 facility buildings. Additional renovation work included an electrical network, a fuel depot, a perimeter security fence, a sanitary sewer system, a site cleaning and final grading, a storm water management distribution system, street lights, road network, and a water distribution system.

Based upon the information obtained during the site visit, available documentation reviewed, and interviews with relevant personnel, construction followed the SOW requirements. The construction process contained an effective quality management system with good documentation during the construction process. Effective communication between the contractor and AFCEE during construction, including the warranty period, aided in problem resolution. Before SIGIR visited the site, poor operation and maintenance (O&M) practices caused problems in the sewer system and also with the generators and the reverse osmosis system. MNSTC-I had detected the problems and was in the process of implementing corrective actions to address.

Sewer system

The sewer holding tanks were not sufficiently pumped. Routine tank O&M did not appear to be effectively performed. The prime contractor documented the overflow issue with pictures and an email regarding a discussion with the O&M contractor. The resulting sewage puddle overflowed to the storm water collection pond. Site Photo 4 shows sewage overflow on 24 February 2006. The issue was resolved when adequate pumping was reinstated as a result of the prime contractor and MNSTC-I intervention.

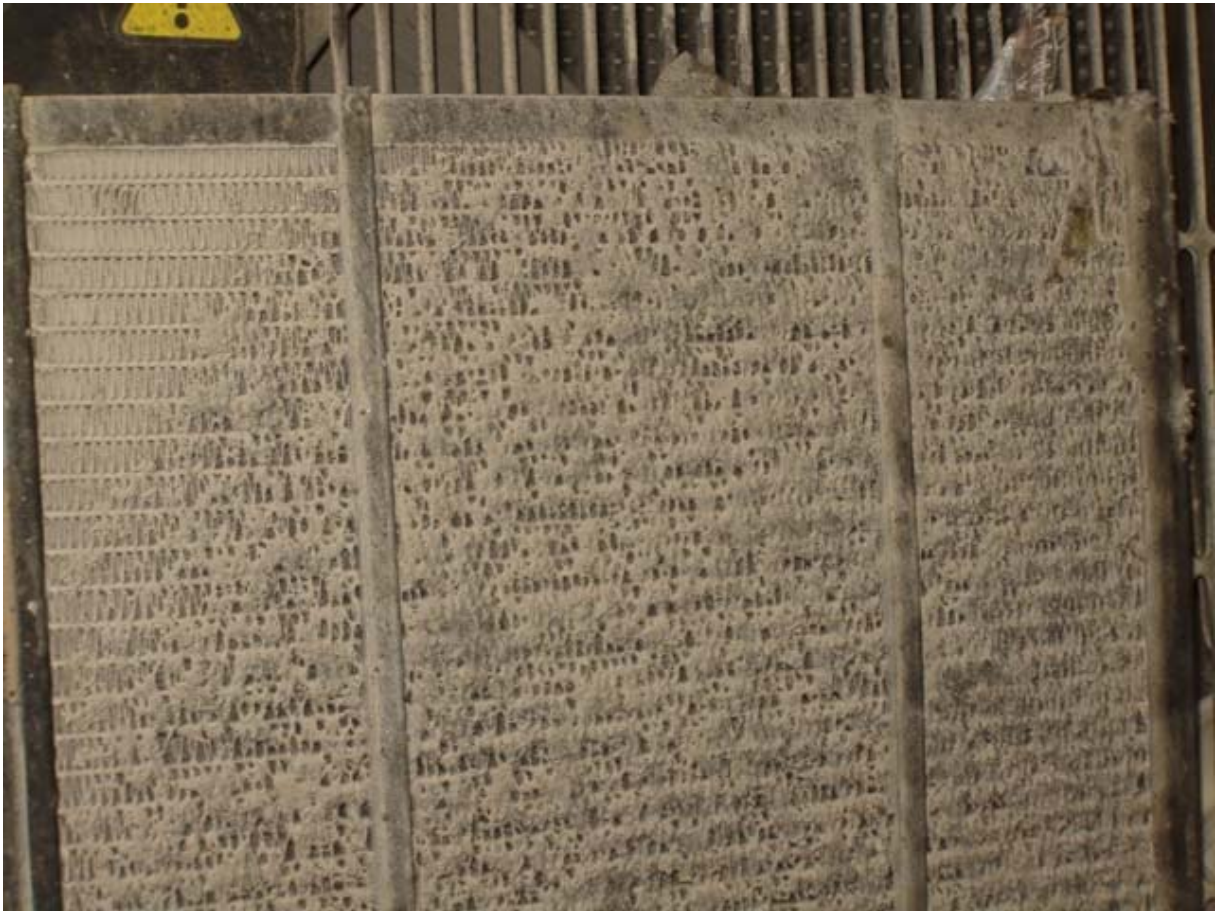


Site Photo 4. Sewage overflows around the holding tanks. (Contractor provided photo)

Generators

In Site Photo 5, the contractor documented dust plugging the screen of a generator radiator. Additionally, feathers and dirt plugged the inline fuel filters of a generator. Both these conditions were the result of poor O&M practices. After a warranty report for a generator at building 277 that was completed on 2 December 2005, the contractor checked the maintenance logs and documented¹ that the recommended O&M was not being performed on any of the generators. The lack of proper O&M resulted in generator failure and the contractor being asked to perform warranty work on items that were not being maintained.

¹ The contractor documented poor O&M practices in a warranty item report form as a result of a request on 2 December 2005 for generator #2. The follow-up recommendation by the contractor included reading/following the generator O&M manual and the keeping of daily logs for each generator covering all O&M completed.



Site Photo 5. Generator radiator screening filled with dust. (Contractor provided photo)

Reverse Osmosis system

In February 2006, the contractor documented that the reverse osmosis (RO) unit had no spare filters, anti-scaling chemical, testing kits, and other various maintenance items available on site. The contractor also reported that regular filter changes had not been performed, the chlorine dosing did not meet requirements, and the RO system pressures were not within the recommended range. This likely occurred because the recommended O&M was not being performed on the RO unit. This caused the RO unit to malfunction with a possibility of damage to the RO membranes. Poor O&M on the RO unit directly impacted water quality.



Site Photo 6. Reverse osmosis unit at installation. (Contractor provided photo)

Site Assessment

With the assistance of MNSTC-I, AFCEE, and the project's prime contractor, SIGIR conducted a site visit on 31 May 2007. While on site, SIGIR observed the current condition of the facility and photographed the site. At the time of the site visit, the Iraqi government had not signed turnover documentation for any part of the Iraqi C-130 base. However, the facility was turned over to MNSTC-I officials in October 2005. Turnover took place in 25 steps beginning with the warehouses (buildings 270, 271, and 273) on 17 May 2005 and ending with the street lights and road network on 11 October 2005.

In addition to the site visit and review of available contract and quality management documentation, SIGIR conducted limited discussions with available personnel. The following photos and narratives describe the conditions observed by SIGIR.

General Observations

The site construction consisted of a complete facility with sixteen buildings, including a storm water system, side walks, road network, a perimeter fence for the entire project, sewer system, electrical system, street lighting, motor pool lighting, and fuel distribution system. The Iraqi C-130 Base appeared as designed in the SOW. At the time of inspection, the base operated fully under the Iraqi Air Force, 597 days since the contractor signed the final turnover document. SIGIR found construction to be in a relatively good and functional state.

For example, in the headquarters building (base support offices B-300), (Site Photos 7 and 8) the interior construction remained fully functional and well maintained. SIGIR noted that although the Iraq Air Force occupied the headquarters building, items such as paint, sockets, switches, electrical wiring, doors, and floor tile work remained, most work appeared new and fresh. The building air conditioning and electrical components also worked well.



Site Photo 7. Headquarters building (B-300) appeared in good condition at the time of the site visit.



Site Photo 8 Headquarters building hallway was well maintained

SIGIR visited the base barracks as part of the inspection. Site Photo 9 shows the sinks in the barracks bathroom. The bathroom sinks, showers, and toilets all worked at the time of the visit. Additionally, bathroom tile work, suspended ceiling, lights, mirrors, and shower doors all appeared to be in good condition.



Site Photo 9. Barracks bathroom in functional condition. Tile work, floors, sinks, and mirrors appeared in good condition.

Site Photo 10 shows a base barracks bedroom in relatively good condition.



Site Photo 10. Barracks bedroom

SIGIR found the base clinic to be a well-maintained facility with overall good construction. In Site Photo 11, the clinic emergency room appeared clean and well organized, with a working electrical system. Bathrooms, exam rooms, offices, pharmacy, dental room, laboratory, patient room, and other sections of the clinic were in similar condition.



Site Photo 11. Base clinic emergency room

However, three items stood out as possible problems for base sustainability: the base generators, the sewer system, and the RO unit.

Generators

The electrical power distribution system included a total of eight generators. The design was for four slabs and two 800-kilowatt generators on each slab. Two generators operated during the site visit, three appeared broken, and three were not functioning for unknown reasons. Two slabs contained one generator, one slab contained two generators, and one slab contained four generators. Two of the generators had been moved from their original location and located to one of the other slabs. It was also noted that one of the broken-down generators had parts removed on 27 October 2006, 216 days before the site visit and the parts had not been replaced at the time of the site visit.

The working generators appeared clean and the inoperative generators contained adequate oil. During SIGIR's visit, a worker sprayed one of the operating generator's radiator with a water hose (Site Photo 12). According to the worker's supervisor, the water was employed to cool the radiator. Water on the ground and on the radiator prevented inspectors from observing any possible coolant leak from the radiator.



Site Photo 12. Worker cools a running generator with water.

SIGIR conducted interviews with the O&M manager on site. No maintenance logs were available for the generators. The O&M manager stated that the broken generators required parts to function properly. The manager pointed to an alternator with an oil leak on one of the broken generators and stated that it needed parts. One of the two running generators had 7399.47 hours (~308 days) of operation. The generators were turned over in August 2005, approximately 638 days before the site visit². The recommended O&M maintenance schedule for the generators requires maintenance to be performed daily, every 250 hours, and every 2500 hours.

² Turnover documents were unavailable for the generators. However, in absence of evidence to the contrary, the contractor's assertion that turnover documents were signed in August 2005 is assumed to be accurate.

Poor O&M was the primary cause of the generator's poor condition. This situation was compounded by resource issues. One of the generators had parts removed but not replaced. Discussions with MNSTC-I personnel verified that supply and distribution issues exist in the Iraqi supply system. Poor O&M practices on the generators will eventually result in sustainability problems as failures occur.

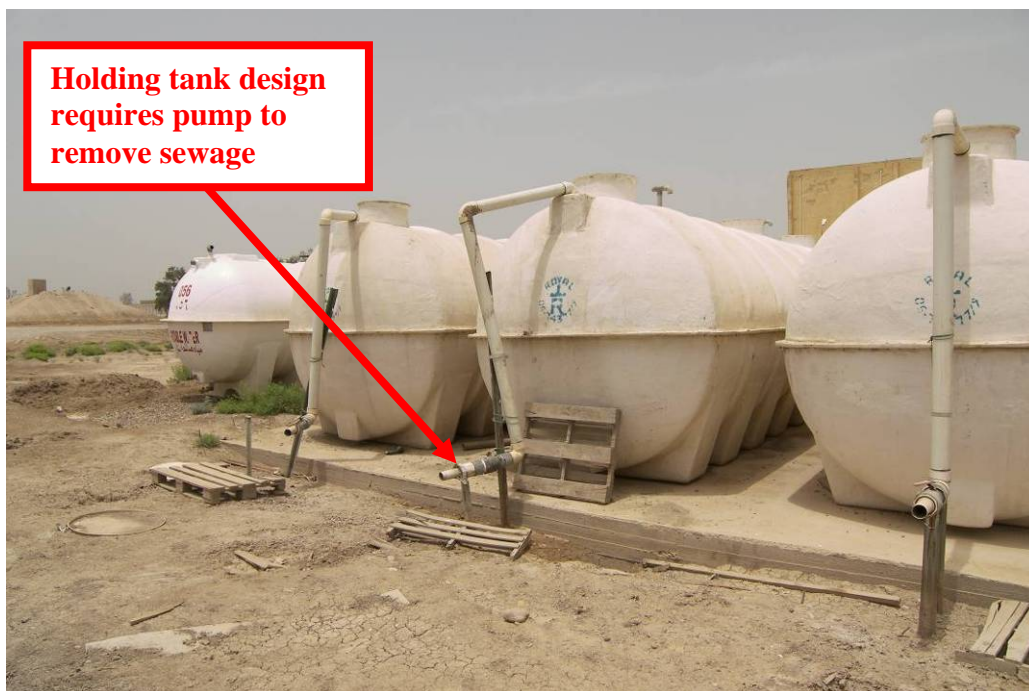
Sewer System

The contractor designed the sanitary sewer system for a capacity of 400 occupants at a rate of 200 liters per person per day as specified by the contract in section 2.1.9.2. The design called for a complete sanitary sewer system. The contractor's design incorporated a gravity drain and five lift stations which pump into three above ground sewer storage tanks as shown in Site Photo 13.

At the time of the SIGIR site visit, the sanitary sewer collection system functioned. SIGIR noted that the sewer collection tanks were empty. The ground by the tanks contained recent truck tracks and wet sewage overspill was evident in the dirt in front of the tanks. Conversations with an on-site contractor performing a site assessment for MNSTC-I verified that the sewer indeed functioned.

Raw sewage filled the storm drainage collection pit (Site Photo 14) and connecting drainage ditch (Site Photo 15). A small wet soil trail was evident in the soil in front of the sewage tanks to the drainage ditch, where it appeared that a hose leaked. The holding tank design only allows sewage removal by pump. Waste removal required a pump truck to transfer sewage from the collection tanks to the drainage ditch. From the evidence on site, the inspectors concluded that the pump trucks were used to pump the holding tanks into the drainage ditch.

The lack of O&M on the sanitary sewage system resulted in reduced performance of the storm overflow system and also caused a potential health hazard.



Site Photo13. Three sewage holding tanks designed to be pumped out.



Site Photo 14. Storm drainage collection pond containing raw sewage.



Site Photo 15. Raw sewage is pumped from sewage holding tanks into storm water runoff ditch

Reverse Osmosis System

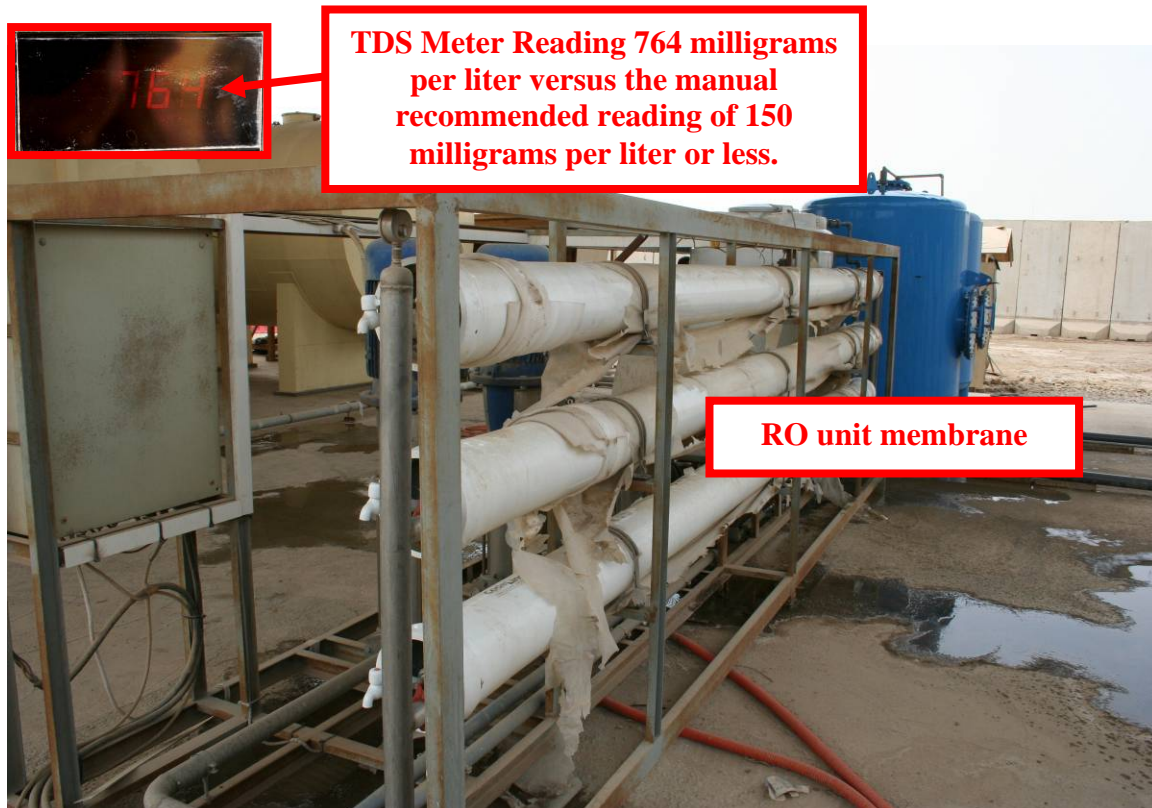
The contractor correctly designed the water supply and distribution system for a capacity of 400 occupants at a maximum rate of 50,000 liters per day, as specified in the contract.

Part of the design included a packaged water treatment plant for filtering and reverse osmosis treatment of water for the site. The contractor's design incorporated a RO system that was capable of producing 10 cubic meters per hour.

SIGIR noted that the RO produced water outside of the recommended total dissolved solids (TDS) range by a factor of five. The TDS meter read a TDS of 764 milligrams per liter, while the O&M manual recommended a reading of 150 milligrams per liter or less (Site Photo 16).

The RO maintenance worker stated that the permeators (the reverse osmosis membrane elements) were "no good". According to the O&M manual, the permeators only require periodic cleaning and fouling is the primary reason for permeator destruction.

The deteriorated condition of the RO unit was due to the lack of O&M. No records of current water tests, filter changes, periodic readings, chemical tank fillings, or other O&M activities were available. This could, be in part, a resource issue. No replacement filters were available at the time of the inspection. Spare parts were not readily available on site. The maintenance supervisor stated that only the base's general officer could grant access to, or order spare filters and replacement parts.



Site Photo 16. RO unit malfunctioning.

Conclusions

Key construction met contract requirements and the facility appeared to have operated at full capacity when accepted by the U.S. government and when observed. This seemed in part due to an effective quality management system and adequate documentation of quality management during the construction process. Additionally, there was effective

communication during the construction process. When observed, the facility appeared in good condition.

Operability and sustainability for some of the improvements to the facility might not be realized over the long term if the equipment and facility are not properly used and maintained.

- a. According to available documentation, generator sustainability was a problem. There were eight generators at the Iraqi C-130 Base. Two operated during the site visit, three were broken, and three were not functioning for unknown reasons. Two generators had been moved from their original locations. One of the broken generators had parts removed on 27 October 2006, 216 days before the site visit.

- b. Past instances of flooding of the sewage holding tanks and runoff of sewage into the storm water collection pond were documented in photos on 18 February and 3 March 2006. However, the problem was subsequently solved.

At the time of the site visit it appeared the sewer collection system functioned; however the nearby storm water collection pond and connecting drainage ditch contained sewage. The holding tank design only allowed sewage removal by pump. A waste removal truck pumped the sewage from the collection tanks into the drainage ditch.

- c. The reverse osmosis system experienced past documented malfunctions. During the warranty period, the prime contractor reported that regular filter changes had not been performed, chlorine dosing did not meet requirements, and the reverse osmosis system pressures were not within the recommended range. Additionally, the prime contractor reported that filters, anti-scaling chemicals, testing kits, and other various maintenance items were not available on site.

During the site visit, it was noted that the total dissolved solids meter registered out of the recommended range; the on-site maintenance workers did not appear to have followed recommended maintenance and testing procedures. Spare parts were not readily available on site.

The Ministry of Defense provided an operation and maintenance contract for the Iraqi C-130 Base. The sustainment problems with the reverse osmosis system that we noted were caused by poor operations and maintenance practices on the part of the Ministry of Defense operation and maintenance contractor.

Recommendations

Although this report identifies sustainment problems, we are not making any recommendations for corrective action because the Multi-National Security Transition Command – Iraq is currently in the process of producing a master plan for the Iraqi C-130 Base. The master plan will address sustainment issues that are problematic. The Multi-National Security Transition Command – Iraq is also researching the use of a simple packaged water chlorination process for production of potable water. This would be a replacement for the current reverse osmosis systems that require daily maintenance. Additionally, the Multi-National Security Transition Command – Iraq is also working specifically on a contract designed for the operation and maintenance of Iraq-wide Ministry of Defense generators. Accordingly, management comments are not required. The Multi-National Security Transition Command-Iraq reviewed a draft of this report and had no comments or additional information.

Appendix A. Scope and Methodology

We performed this project assessment from April through June 2007 in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency. The assessment team included an engineer/inspector and an auditor/inspector.

- In performing this Project Assessment we: reviewed contract documentation to include the award Contract FA8903-04-D-8678, Task Order 0073 and subsequent three modifications with SOW applicable to the reconstruction of the New Al Muthana Air (C-130) Base at BIAP;
- Reviewed design package (drawings and specifications), the Construction Quality Plan, quality control and construction test reports, and quality assurance reports, photos, and contractor construction videos;
- Interviewed the AFCEE Program Manager, contractor representative, the Iraqi Base Colonel, site O&M manager, and various site workers;
- Conducted an on-site assessment on 31 May 2007; and
- Briefed the results of fieldwork to personnel on site before leaving. Additionally, we conducted an out briefing with the MNSTC-I Engineering Staff Section, AFCEE, and MNSTC-I representatives, located in the International Zone.

Appendix B. Acronyms

AFCEE	Air Force Center for Engineering and the Environment
BIAP	Baghdad International Airport
DFAC	Dining Facility
IBC	International Building Code
MNSTC-I	Multi-National Security Transition Command-Iraq
NAMAB	New Al Muthana Air Base
O&M	Operations and Maintenance
QA	Quality assurance
QC	Quality control
RO	Reverse osmosis
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Statement of Work
TDS	Total Dissolved Solids
USACE	United States Army Corps of Engineers
WERC	World Wide Environmental Remediation and Construction

Appendix C. Report Distribution

Department of State

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

Director of U.S. Foreign Assistance/Administrator, U.S. Agency for
International Development

Director, Office of Iraq Reconstruction

Assistant Secretary for Resource Management/Chief Financial Officer,
Bureau of Resource Management

U.S. Ambassador to Iraq

Director, Iraq Transition Assistance Office

Coordinator, Office of Provincial Affairs

Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

Inspector General, U.S. Agency for International Development

Regional Inspector General-Iraq, U.S. Agency for International Development

Department of Defense

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International
Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

Department of the Army

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

Principal Deputy to the Assistant Secretary of the Army for Acquisition,
Logistics, and Technology

Deputy Assistant Secretary of the Army (Policy and Procurement)

Commanding General, Joint Contracting Command-Iraq/Afghanistan

Assistant Secretary of the Army for Financial Management and Comptroller

Chief of Engineers and Commander, U.S. Army Corps of Engineers

Commanding General, Gulf Region Division

Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

U.S. Central Command

Commanding General, Multi-National Force-Iraq

Commanding General, Multi-National Corps-Iraq

Commanding General, Multi-National Security Transition Command-Iraq

Commander, Joint Area Support Group-Central

Other Federal Government Organizations

Director, Office of Management and Budget
Comptroller General of the United States
Inspector General, Department of the Treasury
Inspector General, Department of Commerce
Inspector General, Department of Health and Human Services
President, Overseas Private Investment Corporation
President, U.S. Institute for Peace

Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

Senate Committee on Appropriations
 Subcommittee on Defense
 Subcommittee on State, Foreign Operations, and Related Programs
Senate Committee on Armed Services
Senate Committee on Foreign Relations
 Subcommittee on International Development and Foreign Assistance, Economic Affairs, and International Environmental Protection
 Subcommittee on International Operations and Organizations, Democracy and Human Rights
 Subcommittee on Near Eastern and South and Central Asian Affairs
Senate Committee on Homeland Security and Governmental Affairs
 Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security
 Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia
Permanent Subcommittee on Investigations

U.S. House of Representatives

House Committee on Appropriations
 Subcommittee on Defense
 Subcommittee on State, Foreign Operations, and Related Programs
House Committee on Armed Services
House Committee on Oversight and Government Reform
 Subcommittee on Government Management, Organization, and Procurement
 Subcommittee on National Security and Foreign Affairs
House Committee on Foreign Affairs
 Subcommittee on International Organizations, Human Rights, and Oversight
 Subcommittee on the Middle East and South Asia

Appendix D. Project Assessment Team Members

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

William Tweedy
Wes Snowden